

## WEST Search History





DATE: Wednesday, April 07, 2004

| Hide?                    | Set<br>Name | Query   | Hit<br>Count |
|--------------------------|-------------|---|--------------|
|                          |             | <i>DB=PGPB,USPT,EPAB,JPAB,DWPI; PLUR=YES; OP=OR</i>   |              |
| <input type="checkbox"/> | L17         | 6197559.pn. and pyruvate  | 1            |
| <input type="checkbox"/> | L16         | L15 and 17  | 30           |
| <input type="checkbox"/> | L15         | poxb.ti. or poxb.ab.  | 41           |
| <input type="checkbox"/> | L14         | L12 and 111   | 6            |
| <input type="checkbox"/> | L13         | L12 nad 111   | 12818        |
| <input type="checkbox"/> | L12         | (enterobacteri\$ or coli or escherichia) same 17  | 2667         |
| <input type="checkbox"/> | L11         | L10 and 19  | 75           |
| <input type="checkbox"/> | L10         | 15 with (reduce or reduction or eliminat\$ or attenuat\$ or delet\$ or disable)                     | 124          |
| <input type="checkbox"/> | L9          | L8 and (enterobacteri\$ or coli or escherichia)   | 651          |
| <input type="checkbox"/> | L8          | L7 and 15   | 687          |
| <input type="checkbox"/> | L7          | L6 with (produce or production or manufact\$ or isolat\$ or fermentation or prepare or preparation) | 68458        |
| <input type="checkbox"/> | L6          | amino adj acid  | 232250       |
| <input type="checkbox"/> | L5          | pyruvate adj (dehydrogenase or oxidase)   | 1697         |
|                          |             | <i>DB=PGPB; PLUR=YES; OP=OR</i>   |              |
| <input type="checkbox"/> | L4          | 20030017554.pn. and \$express\$   | 1            |
| <input type="checkbox"/> | L3          | L2 and overexpress\$  | 0            |
| <input type="checkbox"/> | L2          | 20030017554.pn.   | 1            |
|                          |             | <i>DB=USPT; PLUR=YES; OP=OR</i>   |              |
| <input type="checkbox"/> | L1          | 4278765.pn.   | 1            |

END OF SEARCH HISTORY

10/076416  
STN Search Summary

=> d his

FILE 'CAPLUS' ENTERED AT 14:34:43 ON 07 APR 2004

L1 6053 S PYRUVATE (2W) (OXIDASE OR DEHYDROGENASE)  
L2 612181 S AMINO (W) ACID  
L3 201594 S L2 (P) (PRODUC? OR ISOLAT? OR MANUFACTUR? OR FERMENT? OR PREP  
L4 377 S L1 AND L3  
L5 2145 S L1 (P) (ATTENUAT? OR ELIMINAT? OR DECREAS? OR DISABLE? OR RED  
L6 92 S L5 AND L3  
L7 33 S L6 AND (COLI OR ENTEROBACTER? OR ESHERICHIA)

=> d 1-33

L7 ANSWER 1 OF 33 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2004:198192 CAPLUS  
TI Fermentative production of L-methionine with recombinant Coyrnebacterium  
glutamicum overexpressing gene metF  
IN Kroeger, Burkhard; Zelder, Oskar; Klopprogge, Corinna; Schroeder, Hartwig;  
Haefner, Stefan  
PATENT NO. KIND DATE APPLICATION NO. DATE  
-----  
PI DE 10239308 A1 20040311 DE 2002-10239308 20020827  
WO 2004024931 A2 20040325 WO 2003-EP9451 20030826  
PRAI DE 2002-10239308 A 20020827

L7 ANSWER 3 OF 33 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2004:38875 CAPLUS  
TI Exploring the overproduction of amino acids using the bilevel optimization  
framework OptKnock  
AU Pharkya, Priti; Burgard, Anthony P.; Maranas, Costas D.  
SO Biotechnology and Bioengineering (2003), 84(7), 887-899

L7 ANSWER 4 OF 33 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2003:837302 CAPLUS  
TI Methionine synthase genes and bacteria for L-methionine production  
IN Kroeger, Burkhard; Zelder, Oskar; Klopprogge, Corinna; Schroeder, Hartwig;  
Haefner, Stefan  
PATENT NO. KIND DATE APPLICATION NO. DATE  
-----  
PI WO 2003087386 A2 20031023 WO 2003-EP4010 20030416  
DE 10217058 A1 20031127 DE 2002-10217058 20020417  
PRAI DE 2002-10217058 A 20020417

L7 ANSWER 5 OF 33 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2003:492559 CAPLUS  
TI Process for fermentative prepn. of L-amino  
acids in coryneform bacteria with amplification of gnd gene and  
attenuation of poxB gene  
IN Dunican, L. K.; McCormack, Ashling; Stapelton, Cliona; Burke, Kevin;  
Mockel, Bettina  
PA Ire.  
SO U.S. Pat. Appl. Publ., 25 pp., Cont.-in-part of U.S. Ser. No. 531,265,  
abandoned.

|      | PATENT NO.  | KIND | DATE     | APPLICATION NO.  | DATE     |
|------|---|------|----------|------------------|----------|
| PI   | US 2003119154   | A1   | 20030626 | US 2002-78167    | 20020220 |
|      | US 2004063181   | A1   | 20040401 | US 2003-686736   | 20031017 |
| PRAI | US 2000-531265  | B2   | 20000320 |                  |          |
|      | US 2002-78167   | A3   | 20020220 |                  |          |
| L7   | ANSWER 6 OF 33 CAPLUS COPYRIGHT 2004 ACS on STN   |      |          |                  |          |
| AN   | 2003:473143 CAPLUS  |      |          |                  |          |
| TI   | Fermentative production of L-lysine by Corynebacterium glutamicum strain with an attenuated citeE gene                |      |          |                  |          |
| IN   | Farwick, Mike; Huthmacher, Klaus; Marx, Achim; Bathe, Brigitte; Pfefferle, Walter                                     |      |          |                  |          |
|      | PATENT NO.  | KIND | DATE     | APPLICATION NO.  | DATE     |
| PI   | US 2003113879   | A1   | 20030619 | US 2001-770688   | 20010606 |
|      | US 2003157666   | A1   | 20030821 | US 2003-375355   | 20030228 |
| PRAI | US 2001-770688  | A3   | 20010606 |                  |          |
| L7   | ANSWER 7 OF 33 CAPLUS COPYRIGHT 2004 ACS on STN   |      |          |                  |          |
| AN   | 2003:454941 CAPLUS  |      |          |                  |          |
| TI   | Process for the fermentative preparation of L-amino acids with amplification of the tkt gene                          |      |          |                  |          |
| IN   | Burke, Kevin; Dunican, L. K.; Duncian, Rita; McCormack, Ashling; Stapleton, Cliona; Mockel, Bettina; Thierbach, Georg |      |          |                  |          |
| PA   | Ire.  |      |          |                  |          |
| SO   | U.S. Pat. Appl. Publ., 23 pp., Cont.-in-part of U.S. Ser. No. 986,649, abandoned.                                     |      |          |                  |          |
|      | PATENT NO.  | KIND | DATE     | APPLICATION NO.  | DATE     |
| PI   | US 2003109014   | A1   | 20030612 | US 2002-143856   | 20020514 |
| PRAI | US 2000-528196  | B2   | 20000317 |                  |          |
|      | US 2001-986649  | B2   | 20011109 |                  |          |
| L7   | ANSWER 8 OF 33 CAPLUS COPYRIGHT 2004 ACS on STN   |      |          |                  |          |
| AN   | 2003:434740 CAPLUS  |      |          |                  |          |
| TI   | Biosynthetic preparation of non-aromatic L-amino acids in Enterobacteriaceae bacteria                                 |      |          |                  |          |
| IN   | Rieping, Mechthild  |      |          |                  |          |
| PA   | Degussa A.-G., Germany  |      |          |                  |          |
| SO   | PCT Int. Appl., 34 pp.  |      |          |                  |          |
|      | PATENT NO.  | KIND | DATE     | APPLICATION NO.  | DATE     |
| PI   | WO 2003046184   | A1   | 20030605 | WO 2002-EP10792  | 20020926 |
|      | DE 10157721   | A1   | 20030605 | DE 2001-10157721 | 20011124 |
| PRAI | DE 2001-10157721  | A    | 20011124 |                  |          |
| L7   | ANSWER 9 OF 33 CAPLUS COPYRIGHT 2004 ACS on STN   |      |          |                  |          |
| AN   | 2003:133477 CAPLUS  |      |          |                  |          |
| TI   | Production of L-amino acids by Corynebacterium glutamicum strains with attenuated otsB, treY or treZ genes            |      |          |                  |          |
| IN   | Wolf, Andreas; Schischka, Natalie; Hermann, Thomas; Morbach, Susanne; Kraemer, Reinhard                               |      |          |                  |          |

|      | PATENT NO.       | KIND | DATE     | APPLICATION NO.  | DATE     |
|------|------------------|------|----------|------------------|----------|
| PI   | WO 2003014370    | A2   | 20030220 | WO 2002-EP5264   | 20020514 |
|      | WO 2003014370    | A3   | 20031211 |                  |          |
|      | DE 10139062      | A1   | 20030430 | DE 2001-10139062 | 20010809 |
|      | US 2003092139    | A1   | 20030515 | US 2002-212219   | 20020806 |
| PRAI | DE 2001-10139062 | A    | 20010809 |                  |          |
|      | US 2001-316276P  | P    | 20010904 |                  |          |

L7 ANSWER 10 OF 33 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2003:76954 CAPLUS  
 TI Genetically modified Escherichia coli for the fermentative  
 production of threonine containing an attenuated aceK gene  
 IN Hermann, Thomas

|      | PATENT NO.       | KIND | DATE     | APPLICATION NO.  | DATE     |
|------|------------------|------|----------|------------------|----------|
| PI   | WO 2003008616    | A2   | 20030130 | WO 2002-EP7353   | 20020703 |
|      | WO 2003008616    | A3   | 20030904 |                  |          |
|      | DE 10135051      | A1   | 20030206 | DE 2001-10135051 | 20010718 |
| PRAI | DE 2001-10135051 | A    | 20010718 |                  |          |
|      | US 2001-306867P  | P    | 20010723 |                  |          |

L7 ANSWER 11 OF 33 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2003:76942 CAPLUS  
 TI Genetically modified Escherichia coli for the fermentative  
 production of threonine containing an attenuated aceB gene  
 IN Hermann, Thomas

|      | PATENT NO.       | KIND | DATE     | APPLICATION NO.  | DATE     |
|------|------------------|------|----------|------------------|----------|
| PI   | WO 2003008604    | A2   | 20030130 | WO 2002-EP7352   | 20020703 |
|      | WO 2003008604    | A3   | 20031204 |                  |          |
|      | DE 10135051      | A1   | 20030206 | DE 2001-10135051 | 20010718 |
| PRAI | DE 2001-10135051 | A    | 20010718 |                  |          |
|      | US 2001-306867P  | P    | 20010723 |                  |          |

L7 ANSWER 12 OF 33 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2003:76941 CAPLUS  
 TI Genetically modified Escherichia coli for the fermentative  
 production of threonine containing an attenuated aspA gene  
 IN Hermann, Thomas

|      | PATENT NO.       | KIND | DATE     | APPLICATION NO.  | DATE     |
|------|------------------|------|----------|------------------|----------|
| PI   | WO 2003008603    | A2   | 20030130 | WO 2002-EP7351   | 20020703 |
|      | WO 2003008603    | A3   | 20030731 |                  |          |
|      | DE 10135051      | A1   | 20030206 | DE 2001-10135051 | 20010718 |
| PRAI | DE 2001-10135051 | A    | 20010718 |                  |          |
|      | US 2001-306867P  | P    | 20010723 |                  |          |

L7 ANSWER 13 OF 33 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2003:76940 CAPLUS  
 DN 138:132150  
 TI Genetically modified Escherichia coli for the fermentative  
 production of threonine containing an attenuated ugpB gene  
 IN Hermann, Thomas

|      | PATENT NO.       | KIND | DATE     | APPLICATION NO.  | DATE     |
|------|------------------|------|----------|------------------|----------|
| PI   | WO 2003008602    | A2   | 20030130 | WO 2002-EP7350   | 20020703 |
|      | WO 2003008602    | A3   | 20030731 |                  |          |
|      | DE 10135051      | A1   | 20030206 | DE 2001-10135051 | 20010718 |
| PRAI | DE 2001-10135051 | A    | 20010718 |                  |          |
|      | US 2001-306867P  | P    | 20010723 |                  |          |

L7 ANSWER 14 OF 33 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2002:793827 CAPLUS  
DN 137:309605  
TI Production of L-amino acids  
Enterobacteriaceae strains containing an attenuated aceA gene  
IN Rieping, Mechthild; Hermann, Thomas

|      | PATENT NO.       | KIND | DATE     | APPLICATION NO.  | DATE     |
|------|------------------|------|----------|------------------|----------|
| PI   | WO 2002081722    | A2   | 20021017 | WO 2002-EP2421   | 20020306 |
|      | WO 2002081722    | A3   | 20031030 |                  |          |
|      | DE 10116518      | A1   | 20021017 | DE 2001-10116518 | 20010403 |
|      | EP 1383905       | A2   | 20040128 | EP 2002-702397   | 20020306 |
|      | US 2003049803    | A1   | 20030313 | US 2002-114073   | 20020403 |
|      | US 2003054503    | A1   | 20030320 | US 2002-114043   | 20020403 |
|      | US 2003059903    | A1   | 20030327 | US 2002-114048   | 20020403 |
| PRAI | DE 2001-10116518 | A    | 20010403 |                  |          |
|      | US 2001-283384P  | P    | 20010413 |                  |          |
|      | WO 2002-EP2421   | W    | 20020306 |                  |          |

L7 ANSWER 15 OF 33 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2002:793826 CAPLUS  
TI Production of L-amino acids with  
Enterobacteriaceae strains containing an attenuated dgsA gene  
IN Rieping, Mechthild; Hermann, Thomas  
PA Degussa A.-G., Germany  
SO PCT Int. Appl., 33 pp.

|      | PATENT NO.       | KIND | DATE     | APPLICATION NO.  | DATE     |
|------|------------------|------|----------|------------------|----------|
| PI   | WO 2002081721    | A2   | 20021017 | WO 2002-EP2419   | 20020306 |
|      | WO 2002081721    | A3   | 20031030 |                  |          |
|      | DE 10116518      | A1   | 20021017 | DE 2001-10116518 | 20010403 |
|      | EP 1383906       | A2   | 20040128 | EP 2002-719983   | 20020306 |
|      | US 2003049803    | A1   | 20030313 | US 2002-114073   | 20020403 |
|      | US 2003054503    | A1   | 20030320 | US 2002-114043   | 20020403 |
|      | US 2003059903    | A1   | 20030327 | US 2002-114048   | 20020403 |
| PRAI | DE 2001-10116518 | A    | 20010403 |                  |          |
|      | US 2001-283384P  | P    | 20010413 |                  |          |
|      | WO 2002-EP2419   | W    | 20020306 |                  |          |

L7 ANSWER 16 OF 33 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2002:736394 CAPLUS  
TI Cloning of 1- and 6-phosphofructokinase genes from Coryneform bacteria and  
their attenuation for increasing yields of L-lysine in fermn.  
IN Farwick, Mike; Bathe, Brigitte; Brehme, Jennifer; Huthmacher, Klaus  
PA Degussa A.-G., Germany  
SO PCT Int. Appl., 47 pp.

|      | PATENT NO.       | KIND | DATE     | APPLICATION NO.  | DATE     |
|------|------------------|------|----------|------------------|----------|
| PI   | WO 2002074944    | A1   | 20020926 | WO 2002-EP2830   | 20020314 |
|      | DE 10112992      | A1   | 20020926 | DE 2001-10112992 | 20010317 |
|      | US 2003092137    | A1   | 20030515 | US 2002-98626    | 20020318 |
| PRAI | DE 2001-10112992 | A    | 20010317 |                  |          |

L7 ANSWER 17 OF 33 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2002:276126 CAPLUS  
TI Process for the fermentative preparation of D-pantothenic acid using  
coryneform bacteria with poxB gene being eliminated  
IN Dusch, Nicole; Hermann, Thomas; Thierbach, Georg  
PA Degussa A.-G., Germany  
SO PCT Int. Appl., 46 pp.

|      | PATENT NO.       | KIND | DATE     | APPLICATION NO.  | DATE     |
|------|------------------|------|----------|------------------|----------|
| PI   | WO 2002029020    | A1   | 20020411 | WO 2001-EP10212  | 20010905 |
|      | DE 10117085      | A1   | 20020411 | DE 2001-10117085 | 20010406 |
|      | AU 2001091825    | A5   | 20020415 | AU 2001-91825    | 20010905 |
|      | EP 1320586       | A1   | 20030625 | EP 2001-972003   | 20010905 |
|      | US 2002150999    | A1   | 20021017 | US 2001-965825   | 20011001 |
| PRAI | DE 2000-10048604 | A    | 20000930 |                  |          |
|      | DE 2001-10117085 | A    | 20010406 |                  |          |
|      | DE 2000-10047142 | A    | 20000923 |                  |          |
|      | WO 2001-EP10212  | W    | 20010905 |                  |          |

L7 ANSWER 18 OF 33 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2001:713591 CAPLUS  
TI Process for the fermentative preparation of L-  
amino acids in coryneform bacteria with amplification of  
the gnd gene  
IN Dunicau, L. K.; McCormack, Ashling; Stapelton, Cliona; Burke, Kevin;  
Moeckel, Bettina

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|------|----------------|------|----------|-----------------|----------|
| PI   | WO 2001071012  | A1   | 20010927 | WO 2000-EP6299  | 20000705 |
|      | EP 1179076     | A1   | 20020213 | EP 2000-951336  | 20000705 |
|      | BR 2000010817  | A    | 20020305 | BR 2000-10817   | 20000705 |
| PRAI | US 2000-531265 | A    | 20000320 |                 |          |
|      | WO 2000-EP6299 | W    | 20000705 |                 |          |

AB The invention relates to a process for the fermentative  
prepn. of L-amino acids, in particular  
L-lysine, L-threonine, L-isoleucine and L-tryptophan, using coryneform  
bacteria in which at least the gnd gene, which codes for the  
6-phosphogluconate dehydrogenase, is amplified, in particular  
overexpressed. Next steps of the process are concn. of the L-  
amino acid in the medium or in the cells of the bacteria  
and isolation of the L-amino acid  
produced. The gene gnd from Corynebacterium glutamicum was cloned  
and sequenced, and used in the construction of E. coli - C.  
glutamicum shuttle vector pEC-T18mob2 and plasmid vector pECgnd. The poxB  
gene for pyruvate oxidase from C. glutamicum was  
isolated and sequenced and used in construction of vector for  
integration mutagenesis. **Effect of overexpression of the gnd gene with  
simultaneous elimination of the poxB gene on the prepn  
. of lysine was investigated.**